the appearance between the labia, without subjective symptoms, of a small polypoid tumor. When the growth was accompanied by increased secretion, atypical hemorrhages, dysuria, and bearing-down sensations, then it had attained considerable development.

When suppuration and extension to neighboring organs had occured, then the symptoms were dependent on the local changes, and in children especially the pressure symptoms on the pelvic organs were very marked.

A Russian observer reports two cases. The first concerns a strong multipara in whom two years previously there had appeared a small tumor on the posterior vaginal wall near the fornix which slowly increased in size, resisting all local measures. The tumor was about the size of a half dollar and was ulcerated upon its surface.

Prof. Kieter extirpated it and it proved to be a spindle-cell sarcoma lying in the mucous membrane, and extending scarcely at all into the submucosa. Recurrence speedily set in.

Kieter reports a case of similar nature which was seen in the Moscow Marien Hospital, the patient being a female seventeen years old. On the post-vaginal wall was a soft, easily torn tumor the size of a goose egg, and in four months after extirpation it had recurred, and was the size of the fist. The very anemic patient died shortly after the second operation.

Spiegelberg reports a case of fibrosarcoma of the lower portion of the vaginal wall the size of a walnut. This was extirpated, and examination proved it to be a spindle-cell sarcoma. The patient convalesced well, although in poor condition at the time of the operation. Four years afterwards there was no recurrence.

Steinthal divides the disease into two varieties, the polypoid and the diffuse. The former more common in children, and usually situated in the anterior vaginal wall. The latter more common in adults, and found in any portion of the vaginal canal. In adults, when secondary to sarcoma of the uterus, usually first noticed as knobbed polypoid outgrowths in the vaginal vault.

Symptoms. — In children pain and tumor. In adults vaginal discharge and slight hemorrhage from surface of the growth.

Diagnosis made by microscopic examination.

Delay makes prognosis serious.

Treatment early and radical removal of the growth.

Kelly reports two cases where permanent recovery followed removal.

CASE OF SARCOMA OF THE UTERUS.[1]

BY F. H. DAVENPORT, M.D., BOSTON.

THE case I am about to report is interesting not only on account of the ultimate diagnosis, namely, sarcoma, but also for the preceding history, which covers a period of nearly five years. The patient was a married woman who had had one child, and was between forty and forty-five years of age when I first saw her, October 29, 1893. I was asked to see her by Dr. Lovett to operate for the removal of a fibroid polypus. She had had the usual symptoms of irregular flowing and leucorrhea. I found a round polypus about the size of a billiard ball attached by a small pedicle to the uterus, and removed it by twisting and severing the pedicle with scissors. She made a good recovery.

I next saw her in June, 1894, and found on bimanual examination what I supposed to be an enlarged and irregular uterus, the seat of multiple fibroid growths. The patient gave a history of six weeks' constant flowing, which, however, had ceased before she came to me. I advised doing nothing at the time, but in July she consulted her physician at her summer home, who found another polypus extruded from the os uteri. That was removed at St. Margaret's on July 11th. In October of the same year she began to have an increased flow and watery discharge between times, and in December a third growth similar in character to the previous ones was discovered and removed. These growths were to my eye typical fibroid polypi, and with the uterus presumably the seat of multiple fibroids, their gradual development and extrusion was explained. The growth in the pelvis was slowly enlarging. The question of some more radical operation was spoken of at this time, but family considerations made it extremely unwise then, and as the patient's general health continued good it was postponed. Nothing new developed until November 26, 1895, nearly a year, when the fourth polypus was removed. This was done at a time when there had been and still was considerable hemorrhage, and the operation was followed by a decided flow, which was checked by packing the uterus. In fact it was a peculiarity of all these operations that they were accompanied by more flowing than is usually the case.

April 21, 1896, five months after the last polypus, another was discovered. There had been a rapid increase in the size of the tumor since the last operation, so that it reached nearly to the umbilicus, and enlarged the abdomen considerably. It was still thought to be a fibroid. The operation was as usual, and the first day or two of the convalesence uneventful. On the morning of the third day the patient was found to be in intense pain in the abdomen, coming on in paroxyms, alternating with collapse, weak pulse, vomiting and suppression of urine. Under stimulation she improved, but was in a critical condition for twenty-four hours. On examining the abdomen at this time it was found that the tumor had disappeared and the abdomen was flat. Of course the explanation was a spontaneous rupture of a cyst, and the collapsed condition was due to the flooding of the peritoneum with the cyst contents and its efforts to absorb it. I regret that the exact notes of the case at this time cannot be obtained, as the condition was a very unusual and interesting one. Perhaps Dr. Lovett or Dr. Stone, both of whom saw her at the time, can give fuller details.

An examination of the specimen removed at this time by Dr. Curry, of the City Hospital, showed it to be a submucous fibroid which had undergone myxomatous degeneration, portions of which were necrotic, and into which there had been much hemorrhage.

The collapse of the tumor disproved the diagnosis of a fibroid, and put a new aspect on the case. I hoped that it was one of those thin-walled cysts of the broad ligaments which rupture easily and do not refill. Unfortunately that did not prove to be the case, for after some months the tumor could be again felt, and grew so rapidly that by November of that year it was deemed best to operate for its removal.

A laparotomy was performed on November 30th, and the following condition of things found: The uterus

[1] Read before the Obstetrical Society of Boston, February 21, 1899

was only slightly enlarged, and there were no fibroids in its substance as far as could be made out. Certainly none were visible on the external surface. On the left side there was an ovarian cyst about the size of a cocoanut, closely adherent to the uterus, and with a broad attachment to the broad ligament. This was slowly detached, the stump both of the broad ligament and along the side of the uterus being ligated with interrupted silk sutures. A smaller tumor of the same kind was found on the right side and was also removed. The question of removing the uterus was discussed, but as there was no apparent tumor, and the operation had already lasted over an hour, it was thought best to leave it. I was the more ready to do this since I had had a number of cases where uterine hemorrhage was a prominent symptom of adherent cysts of the ovary, and I hoped by removing the tumors and bringing about the menopause to check both the flowing and the formation of the polypi.

The convalescence following the laparotomy was uneventful, and it was confidently hoped that the long series of gynecological events had come to an end. Such was not the case however. February 8, 1897, about two months after the last operation, another polypoid mass was discovered, and removed on February 19th.

Through the spring and early summer the patient's general condition was fairly good, though it could not be said to be first-rate. There was considerable discharge, which at times was bloody, and her strength did not return as was expected. In July she had an illness at her home in the country which, while associated with some flowing and discharge and pain, was not definitely attributable to any uterine condition. I saw her at the time, and found no reason in her local condition for interfering.

In October, 1897, she began to flow and also to have pain, which would come on usually at a certain time of day, attain a good deal of intensity, and last from one hour to two or three. This was situated in the lower abdomen, somewhat to the right side, about the location of the right ovary. Examination repeatedly made revealed nothing but a slightly enlarged uterus, with nothing to account for the pain. There was considerable discharge, both blood and small grayish or reddish masses, which were twice examined by Dr. Whitney and pronounced merely blood clot, without any evidence of tissue. At this time she began to take morphia in very small doses, one-twelfth often sufficing to relieve the pain completely.

Although it seemed probable that some operation would be eventually necessary, yet in the absence of any direct evidence of a malignant growth there were certain very strong reasons involving family complications against any operation which might have a fatal termination. Through the winter of 1897 and 1898 her condition varied within moderately fixed limits. At times there was discharge and some flow, at others she was practically free. The pain varied greatly, at times interfering only slightly with her usual occupations, but sometimes so intense as to sap her strength and confine her to the bed or house for some days. She lost flesh, became sallow, and her nervous system, which was naturally very strong, showed the effect of the prolonged strain.

By the middle of April, 1898, it was thought best to explore the interior of the uterus more thoroughly, and a curetting was done on the 13th, which resulted in the removal of a mass of tissue which Dr. Whitney described as follows: The mass from Mrs. X consisted of a fragmentary, soft polypoid, necrotic and hemorrhagic tumor of considerable size. Microscopical examination showed a more or less homogeneous mass of small round cells, which were vascularized by relatively large thin-walled blood vessels with extensive hemorrhage and degeneration of the cells. The cells were mononucleated, rather elongated and irregular, and were of the type of connective-tissue cells. There is no evidence of any epithelial growth, and from the history taken in connection with the microscopic examination the diagnosis of a small round-cell sarcoma is justified.

This diagnosis rendered an operation necessary, so on May 5, 1898, at St. Margaret's, a hysterectomy was performed. The operation was a difficult one. It was begun by the vagina, the uterus being first curetted and packed. The vaginal mucous membrane at its junction with the cervix was then divided with the Paquelin cautery and an attempt made to tie or clamp the broad ligaments. Owing to adhesions and thickenings due to the double oöphorectomy previously done, this was found to be impossible, so the abdomen was opened, and the operation completed by that route. It was a long and tedious operation, but the patient stood it very well.

The convalescence was marked by two unusual events. On the third or fourth day the abdominal incision broke down and discharged a large quantity of foul-smelling pus. The abscess had burrowed between the layers of the abdominal wall, but did not, as far as I could make out by careful probing, communicate with the peritoneal cavity. For days there was considerable difficulty with nourishment, the patient vomiting frequently, and the bowels moving irregularly. She had considerable pain and required some morphine for its relief.

On May 15th, ten days after the operation, the evening temperature was 101°. The patient had had considerable pain all day, but the bowels had moved twice, and she had taken a fair amount of nourishment. On the morning of the 16th she vomited, appeared listless and indifferent to her surroundings, and disinclined to talk. The temperature had dropped to 98°. Throughout the day it continued to fall, and at 7.30 in the evening reached its lowest point, 95.08°. The pulse grew more rapid, and ranged from 110 to 120. She was given champagne in small quantities, enemas of salt solution, with brandy, brandy and ice by the mouth, strychnine, one-sixtieth grain, several times. She was not able to take any nourishment. Urine was passed at intervals, but the whole amount for twenty-four hours was small. The bowels moved by enema. Her general appearance was bad, and at my late evening visit I felt there was considerable doubt if she would live until morning. The temperature began to rise in the night, and the next morning was 99°, rising to a little over 100° that night and then dropping slowly day by day until in a week it was practically normal. With the reaction the pulse rose in frequency, reaching 135 on the evening of the 17th. Dr. Lovett saw her with me in this attack, and we felt we could eliminate septic peritonitis, or in fact any septic process, and I must confess I am to this day puzzled as to what caused this sudden change.

The convalescence was now rapid, the abdominal wound closed, and the patient went home at the end of four weeks. I have examined her within a week and

her condition is one of apparent perfect health now, nine months after the operation.

Dr. Whitney reported on the uterus as follows:

The preliminary examination of the tumor of the uterus from Mrs. X shows it to be a myxosarcoma which has started in the fundus, thus confirming the diagnosis made earlier from the scrapings.

SARCOMA OF THE UTERUS.[1]

BY WILLIAM F. WHITNEY, M.D., BOSTON.

SARCOMA of the uterus has been recognized for a long time though comparatively a rare affection. Geisler computed that it occurred in 1.2 per cent. of uterine tumors, and its relations to cancer and fibromyoma were in the proportion of 1 to 50 of the former and 1 to 36 of the latter. Without imposing too much upon your patience, I can only give what may be regarded as a short *résumé* of the results of observations upon this disease.

In the first place comes its clinical course and prognosis, and in the second its anatomical aspects.

In studying its history from the recorded cases we are met with the obstacle that they are rarely finished. Thus while the earlier history is fairly well given and the operative procedures for relief, the final outcome is often uncertain. So that whether treatment will prolong life and mitigate suffering must be for the present and future to decide, rather than the past, with its death list from sepsis.

In an analysis of 81 cases in which the age was given, there were found 12 before thirty years of age, and 70 between thirty and sixty-one years (the oldest), or dividing them at forty-five years (the climacteric), it was found that 26 occurred before and 45 after that period.

Or to put it in a way to be more easily remembered, it may be said that sarcoma of the uterus rarely occurs after sixty years of age, and that it occurs six times as often in the last half of that period as in the first half, and that the greater number occurs between the age of thirty-five and fifty-five years.

In regard to duration the analysis is rather more vague. But dating from the first appearance of symptoms till the end of the time of the published record of 57 cases, it was found that in 18 it had lasted two years, in 19 from two to six years, and in 22 under two years.

In dividing these up by decades it appears that a larger number of the longer cases falls between thirty-five and forty-five. This is perhaps natural, as during this period the vital forces are strongest and best capable of resisting the wasting effects of the disease.

The most prominent symptom is hemorrhage, being absent in only one case in which the symptoms were especially mentioned. Pain is often present.

Of the objective symptoms, enlargement of the uterus is very constant, with a tumor sometimes presenting at the os, or within the vagina, as a rule with a smooth surface, sometimes lobulated and not deeply ulcerated.

Death usually occurs from anemia and debility; metastases being rare, and when present often found in the lungs.

The differential diagnosis between this and cancer, or fibromyoma, will depend, in the greater number of cases, upon a histological examination. The etiology is as obscure, and as yet nothing which can even be regarded as a predisposing cause has been suggested. Age as a factor differs from that of sarcomas elsewhere, as we have seen that it occurs oftener after forty than before.

With this brief summary the clinical aspect of the disease can be left.

Upon the anatomical and histological characteristics we are much better informed, and numerous interesting facts have been brought out. Sarcomas are found starting from the fundus or the cervix, the latter presenting some peculiarities that have placed them in a class by themselves. Those of the fundus are subdivided by their place of origin, whether in the mucosa or in the wall proper. And to these is added a class which starts from the decidua or villi of the chorion, about which at present there is an active controversy. But this will be left out of consideration as it would take too much time.

The richly cellular tissue lying between the uterine glands needs but little change in the energy of its growth and the shape of its cells to become a sarcoma, and it is only to be wondered at that it does not occur more frequently. In its gross appearance it is a smooth, more or less lobulated, often polypoid growth, circumscribed or extending more or less completely over the entire endometrium. The glands may atrophy or keep pace with the development of the new growth, either preserving their typical form or becoming solid strings; in the latter case the variety of carcino-sarcoma is produced. Later the uterine wall may become involved and invaded, and a great development of blood-vessels take place with extensive hemorrhage. The case which Dr. Davenport has reported would illustrate a round-cell sarcoma of endometrial origin.

With the elongation of the cells the spindle-cell type is produced, associated, in a few cases, with multinuclear or giant cells. Those starting around the sheath of the blood-vessels (perithelioma), as well as those with a hyaline degeneration of the vascular walls (cylindroma), have also been reported, and in short all the varieties which the ingenuity of the histologist has been able to devise have been found here.

In the wall of the uterus the tissue between the muscular fibres may be the place of origin, or it may arise from the degeneration of a fibromyoma. For a long time such a change was considered probable from the appearances to the eye, but the microscopic proof of this was furnished by two independent observers, Williams[2] and Pick,[3] at the same time, who have shown the direct metaplasia of the muscular fibre into sarcomatous tissue, and Van Kahlden,[4] who has described the same change of the fibrous tissue.

To the eye the sarcoma of the wall appears as soft, homogeneous, pale reddish-gray nodules which may grow into the cavity of the uterus as polypoid masses, and in their advanced stages their point of origin is not always easy to make out and often requires careful study. The peculiar form which occurs in the cervix has been well presented by Pernice[5] and Pfannenstiel,[6] and the latter has collected twelve cases. He designates it as a "botryoidal (berry-like) sarcoma of the

[1] Read before the Obstetrical Society of Boston, February 21, 1899.

[2] Williams: Zeitsch. f. Heilkunde, Bd. xv, S. 141.
[3] Pick: Arch. f. Gynec., Bd. xlviii, S. 241.
[4] Van Kahlden: Zeigler's Beitrage, Bd. xiv.
[5] Pernice: Virchow's Arch., Bd. cxiii, S. 46.
[6] Pfannenstiel: Virchow's Arch., Bd. cxxvii, S. 305.